

1       1. In a video data recording system that is associated with a television on  
2 which a program can be displayed and includes a storage device for storing video data  
3 associated with the program, a method for optimizing the use of available storage space on  
4 the storage device, the method comprising the acts of:

5             receiving a request by a viewer for the system to record a first program on  
6 the storage device;

7             selectively assigning a first tag to said first program;

8             applying recording rules to said first tag to determine whether the request to  
9 record said first program is to be fulfilled; and

10            if it is determined that the request is to be fulfilled, automatically  
11 programming the system to record the video data associated with said first program  
12 on the storage device.

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14       2. A method as recited in claim 1, wherein said first tag is automatically  
15 assigned by the system.

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17       3. A method as recited in claim 1, wherein viewer input received by the  
18 system assigns said first tag to said first program.

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20       4. A method as recited in claim 1, further comprising informing said viewer  
21 when insufficient space is available on the storage device to record said first program.

1       5. A method as recited in claim 1, wherein said first tag is a guaranteed tag for  
2 causing sufficient recording space on the storage device to be reserved when said request is  
3 received for recording said first program on the storage device.

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5       6. A method as recited in claim 5, wherein:

6                 said act of applying recording rules to the first tag to determine whether the  
7 request to record the first program is to be fulfilled comprises determining, at a  
8 time when said request is received, whether said sufficient storage space is  
9 available on the storage device to record said first program; and

10                 said act of automatically programming the system to record the video data  
11 associated with said first program on the storage device comprises:

12                 reserving said sufficient storage space for the recording of said first  
13 program if said sufficient storage space is available; and

14                 automatically programming the system to record said first program  
15 in said sufficient storage space when said first program is broadcast.

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17       7. A method as recited in claim 6, wherein if said sufficient storage space is  
18 not available, the method further comprises informing said viewer that insufficient storage  
19 space is available on the storage device to record said first program.

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21       8. A method as recited in claim 1, wherein said first tag is an optional tag for  
22 causing said first program to be recorded on the storage device if sufficient storage space  
23 exists on the storage device when said first program is broadcast.

- 1       9. A method as recited in claim 8, wherein:
  - 2           said act of applying recording rules to the first tag to determine whether the
  - 3           request to record the first program is to be fulfilled comprises determining, at the
  - 4           time when said first program is to be broadcast, whether sufficient storage space is
  - 5           available on the storage device to record said first program; and
  - 6           said act of automatically programming the system to record the video data
  - 7           associated with said first program on the storage device comprises recording said
  - 8           first program on the storage device if said sufficient storage space is available when
  - 9           said first program is broadcast.
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- 11      10. A method as recited in claim 9, wherein if said sufficient storage space is
- 12      not available when said first program is to be broadcast, the method further comprises
- 13      informing said viewer that insufficient storage space is available on the storage device to
- 14      record said first program.
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- 16      11. A method as recited in claim 1, wherein said first tag identifies a first
- 17      priority for recording said first program.
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- 19      12. A method as recited in claim 11, further comprising the acts of:
  - 20           receiving a request for the system to record a second program on the storage
  - 21           device; and
  - 22           selectively assigning a second tag to said second program to identify a
  - 23           second priority for recording said second program on the storage device.
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1           13. A method as recited in claim 12, wherein when storage space available on  
2 the storage device is only sufficient to store data associated with one of said first program  
3 and said second program, the method further comprises the acts of:

4                 determining which of said first priority and said second priority is a higher  
5 priority; and

6                 overwriting said first program with said second program if said second  
7 priority is higher than said first priority.

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9           14. A method as recited in claim 13, wherein if said first priority is a higher  
10 priority, the method further comprises the act of informing said viewer that insufficient  
11 space is available on the storage device to record said second program.

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13           15. A method as recited in claim 11, further comprising the acts of:

14                 comparing said first priority with a third priority corresponding to a third  
15 tag assigned to a previously recorded program stored on the storage device;

16                 determining which of said first priority and said second priority is a higher  
17 priority; and

18                 if said first priority is a higher priority, recording said first program over  
19 said previously recorded program.

1       16. A method as recited in claim 1, further comprising the act of recording said  
2 first program on the storage device.

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4       17. A method as recited in claim 16, further comprising the acts of:  
5              applying storage rules to said first tag to determine when said first program  
6 is to be deleted from the storage device; and  
7              deleting said first program from the storage device.

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1       18. In a video data management system that is associated with a television on  
2 which a program can be displayed and includes a storage device for storing video data  
3 associated with one or more recorded programs, a method for optimizing the availability of  
4 storage space on the storage device, the method comprising the acts of:

5             selectively assigning a first tag to a first recorded program to identify a first  
6 priority for maintaining said first recorded program on the storage device;

7             applying storage rules to said first tag to determine whether to delete said  
8 first recorded program from the storage device; and

9             if it is determined that said first recorded program is to be deleted from the  
10 storage device, automatically deleting said first recorded program from the storage  
11 device.

13       19. A method as recited in claim 18, wherein:

14             said act of applying recording rules to said first tag comprises:

15                 determining whether said first recorded program is a partial  
16 program; and

17                 indicating that said first recorded program is to be overwritten when  
18 a second program is recorded on the storage device if said first recorded  
19 program is a partial program.

21       20. A method as recited in claim 19, wherein if said first recorded program is a  
22 partial program, the method further comprises notifying a viewer that said first recorded  
23 program is to be overwritten when a second program is recorded on the storage device.

1           21. A method as recited in claim 18, wherein if said first tag includes a time for  
2 deletion, the method further comprises deleting said first recorded program from the  
3 storage device at said deletion time.

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5           22. A method as recited in claim 18, wherein if a portion of said first recorded  
6 program has been viewed by a viewer, performing the acts of:

7                         determining whether to delete the said viewed portion; and  
8                         deleting said viewed portion of said first recorded program from the storage  
9 device if said viewed portion is to be deleted.

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11           23. A method as recited in claim 18, further comprising the acts of:  
12                         determining whether said first recorded program is included in a defined  
13 bucket of related programs; and  
14                         if said first recorded program is included in said defined bucket, further  
15 performing the acts of:

16                         determining a bucket size allocated for said bucket;  
17                         determining whether said bucket size is exceeded; and  
18                         deleting one or more recorded programs on the storage device if said  
19 bucket size is exceeded.

1       24. An intelligent recording and management system for recording and  
2 managing video data on a storage device, the system comprising:

3                 a receiver for receiving a signal carrying programming;  
4                 a recording device coupled to said receiver for selectively recording video  
5 data corresponding to a program of said programming based on a recording tag  
6 assigned to said program and recording rules that determine whether said program  
7 is to be recorded;

8                 a storage device coupled to said recording device for storing said recorded  
9 video data based on a storage tag assigned to said recorded video data and storage  
10 rules that determine whether said recorded video data is to be deleted; and

11                 an interface coupled to said recording device for informing a viewer.

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13       25. A system as recited in claim 24, wherein said interface informs said viewer  
14 as to an amount of space that is available on said storage device for storing video data.

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16       26. A system as recited in claim 24, wherein said interface informs said viewer  
17 of recording said video data corresponding to said program on said storage device.

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19       27. A system as recited in claim 24, wherein said interface informs said viewer  
20 of deleting said recorded video data from said storage device.

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22       28. A system as recited in claim 24, wherein said interface informs said viewer  
23 as to why only a portion of said video data was recorded on said storage device.